

IN THE CLAIMS:

1. (Cancelled).
2. (Previously Presented) A semiconductor device comprising:
a substrate having a front surface and a rear surface;
an aluminum nitride insulating film containing therein oxygen provided under said rear surface of the substrate; and
a transistor provided over said front surface of the substrate, said transistor having at least a channel formation region comprising crystalline silicon, a gate insulating film adjacent to said channel formation region, and a gate electrode adjacent to said channel formation region with said gate insulating film interposed therebetween.
3. (Previously Presented) A semiconductor device comprising:
a substrate having a front surface and a rear surface;
an aluminum nitride insulating film containing therein oxygen provided under said rear surface of the substrate; and
a transistor provided over said front surface of the substrate, said transistor having at least a channel formation region comprising crystalline silicon, a gate insulating film adjacent to said channel formation region, and a gate electrode adjacent to said channel formation region with said gate insulating film interposed therebetween,
wherein said aluminum nitride insulating film has a thermal conductivity of 0.6 W/cm K or higher.
- 4-5. (Cancelled).
6. (Previously Presented) A semiconductor device comprising:
a substrate having a front surface and a rear surface;
an aluminum nitride insulating film containing therein carbon provided under said rear surface of the substrate; and
a transistor provided over said front surface of the substrate, said transistor having at least a channel formation region comprising crystalline silicon, a gate insulating film adjacent

to said channel formation region, and a gate electrode adjacent to said channel formation region with said gate insulating film interposed therebetween.

7. (Previously Presented) A semiconductor device comprising:
a substrate having a front surface and a rear surface;
an insulating film comprising aluminum nitride and oxygen provided under said rear surface of the substrate; and
a transistor provided over said front surface of the substrate, said transistor having at least a channel formation region comprising crystalline silicon, a gate insulating film adjacent to said channel formation region, and a gate electrode adjacent to said channel formation region with said gate insulating film interposed therebetween,
wherein said insulating film comprising aluminum nitride has a thermal conductivity of 0.6 W/cm K or higher.

8. (Previously Presented) A semiconductor device comprising:
a substrate having a front surface and a rear surface;
an insulating film comprising aluminum nitride and carbon provided over said front surface of the substrate;
a transistor provided over said insulating film, said transistor having at least a channel formation region comprising crystalline silicon, a gate insulating film adjacent to said channel formation region, and a gate electrode adjacent to said channel formation region with said gate insulating film interposed therebetween.

9-10. (Cancelled).

11. (Original) The device of claim 2 wherein said substrate is a glass substrate.

12. (Original) The device of claim 3 wherein said substrate is a glass substrate.

13-14. (Cancelled).

15. (Previously Presented) The device of claim 6 wherein said substrate is a glass substrate.
16. (Previously Presented) The device of claim 7 wherein said substrate is a glass substrate.
17. (Previously Presented) The device of claim 8 wherein said substrate is a glass substrate.
18. (Cancelled).
19. (Previously Presented) A semiconductor device comprising:
a substrate having a front surface and a rear surface;
an aluminum nitride insulating film containing therein carbon provided over said front surface of the substrate; and
a transistor provided over said aluminum nitride insulating film, said transistor having at least a channel formation region comprising crystalline silicon, a gate insulating film adjacent to said channel formation region, and a gate electrode adjacent to said channel formation region with said gate insulating film interposed therebetween.
20. (Previously Presented) A semiconductor device comprising:
a substrate having a front surface and a rear surface;
an aluminum nitride insulating film containing therein carbon provided over said front surface of the substrate; and
a transistor provided over said aluminum nitride insulating film, said transistor having at least a channel formation region comprising crystalline silicon, a gate insulating film adjacent to said channel formation region, and a gate electrode adjacent to said channel formation region with said gate insulating film interposed therebetween,
wherein said aluminum nitride insulating film has a thermal conductivity of 0.6 W/cm K or higher.

21. (Previously Presented) An active matrix type display comprising:
a substrate having a front surface and a rear surface;
an aluminum nitride insulating film containing therein carbon provided over said front surface of the substrate; and
a transistor provided over said aluminum nitride insulating film, said transistor having at least a channel formation region comprising crystalline silicon, a gate insulating film adjacent to said channel formation region, and a gate electrode adjacent to said channel formation region with said gate insulating film interposed therebetween.
22. (Previously Presented) A semiconductor device comprising:
a substrate having a front surface and a rear surface;
an aluminum nitride insulating film containing therein oxygen provided under said rear surface of the substrate; and
a transistor provided over said front surface of the substrate, said transistor having at least a channel formation region comprising crystalline silicon, a gate insulating film adjacent to said channel formation region, and a gate electrode adjacent to said channel formation region with said gate insulating film interposed therebetween;
wherein aluminum to nitrogen ratio in said aluminum nitride insulating film is in the range of 0.9 to 1.4.
23. (Previously Presented) A semiconductor device comprising:
a substrate having a front surface and a rear surface;
an aluminum nitride insulating film containing therein carbon provided under said rear surface of the substrate; and
a transistor provided over said front surface of the substrate, said transistor having at least a channel formation region comprising crystalline silicon, a gate insulating film adjacent to said channel formation region, and a gate electrode adjacent to said channel formation region with said gate insulating film interposed therebetween,
wherein aluminum to nitrogen ratio in said aluminum nitride insulating film is in the range of 0.9 to 1.4.

24. (Previously Presented) A semiconductor device comprising:
a substrate having a front surface and a rear surface;
an aluminum nitride insulating film containing therein carbon provided over said front surface of the substrate; and
a transistor provided over said aluminum nitride insulating film, said transistor having at least a channel formation region comprising crystalline silicon, a gate insulating film adjacent to said channel formation region, and a gate electrode adjacent to said channel formation region with said gate insulating film interposed therebetween,
wherein aluminum to nitrogen ratio in said aluminum nitride insulating film is in the range of 0.9 to 1.4.
25. (Previously Presented) The device of claim 19 wherein said substrate is a glass substrate.
26. (Previously Presented) The device of claim 20 wherein said substrate is a glass substrate.
27. (Previously Presented) The display of claim 21 wherein said substrate is a glass substrate.
28. (Previously Presented) The device of claim 22 wherein said substrate is a glass substrate.
29. (Previously Presented) The device of claim 23 wherein said substrate is a glass substrate.
30. (Previously Presented) The device of claim 24 wherein said substrate is a glass substrate.
31. (Previously Presented) The device of claim 2 wherein said aluminum nitride insulating film has a thickness of 5000 Å.

32. (Previously Presented) The device of claim 3 wherein said aluminum nitride insulating film has a thickness of 100 Å to 5000 Å.

33. (Previously Presented) The display of claim 6 wherein said aluminum nitride insulating film has a thickness of 100 Å to 5000 Å.

34. (Previously Presented) The device of claim 7 wherein said insulating film comprising aluminum nitride has a thickness of 100 Å to 5000 Å.

35. (Previously Presented) The device of claim 8 wherein said insulating film has a thickness of 100 Å to 5000 Å.

36. (Cancelled).

37. (Previously Presented) The device of claim 19 wherein said aluminum nitride insulating film has a thickness of 100 Å to 5000 Å.

38. (Previously Presented) The device of claim 20 wherein said aluminum nitride insulating film has a thickness of 100 Å to 5000 Å.

39. (Previously Presented) The display of claim 21 wherein said aluminum nitride insulating film has a thickness of 100 Å to 5000 Å.

40. (Previously Presented) The device of claim 22 wherein said aluminum nitride insulating film has a thickness of 100 Å to 5000 Å.

41. (Previously Presented) The device of claim 23 wherein said aluminum nitride insulating film has a thickness of 100 Å to 5000 Å.

42. (Previously Presented) The device of claim 24 wherein said aluminum nitride insulating film has a thickness of 100 Å to 5000 Å.

43. (Previously Presented) The device of claim 2 wherein said channel formation region is crystallized by laser irradiation through a layer comprising silicon oxide on said channel formation region.

44. (Previously Presented) The device of claim 3 wherein said channel formation region is crystallized by laser irradiation through a layer comprising silicon oxide on said channel formation region.

45. (Previously Presented) The device of claim 6 wherein said channel formation region is crystallized by laser irradiation through a layer comprising silicon oxide on said channel formation region.

46. (Previously Presented) The device of claim 7 wherein said channel formation region is crystallized by laser irradiation through a layer comprising silicon oxide on said channel formation region.

47. (Previously Presented) The device of claim 8 wherein said channel formation region is crystallized by laser irradiation through a layer comprising silicon oxide on said channel formation region.

48. (Previously Presented) The device of claim 19 wherein said channel formation region is crystallized by laser irradiation through a layer comprising silicon oxide on said channel formation region.

49. (Previously Presented) The device of claim 20 wherein said channel formation region is crystallized by laser irradiation through a layer comprising silicon oxide on said channel formation region.

50. (Previously Presented) The device of claim 21 wherein said channel formation region is crystallized by laser irradiation through a layer comprising silicon oxide on said channel formation region.

51. (Previously Presented) The device of claim 22 wherein said channel formation region is crystallized by laser irradiation through a layer comprising silicon oxide on said channel formation region.

52. (Previously Presented) The device of claim 23 wherein said channel formation region is crystallized by laser irradiation through a layer comprising silicon oxide on said channel formation region.

53. (Previously Presented) The device of claim 24 wherein said channel formation region is crystallized by laser irradiation through a layer comprising at least one of silicon oxide and silicon nitride on said channel formation region.

54. (Previously Presented) A semiconductor device comprising:
a substrate having a front surface and a rear surface;
an aluminum nitride insulating film containing therein oxygen provided under said rear surface of the substrate; and
a transistor provided over said front surface of the substrate, said transistor having at least a channel formation region comprising crystalline silicon, a gate insulating film adjacent to said channel formation region, and a gate electrode adjacent to said channel formation region with said gate insulating film interposed therebetween;
an interlayer insulating film having a leveled upper surface over said transistor; and
a pixel electrode over said interlayer insulating film.

55. (Previously Presented) The device of claim 54 wherein said channel formation region is crystallized by laser irradiation through a layer comprising silicon oxide on said channel formation region.

56. (Previously Presented) The device of claim 54 wherein said substrate is a glass substrate.

57. (Previously Presented) A semiconductor device comprising:
a substrate having a front surface and a rear surface;
an aluminum nitride insulating film containing therein carbon provided over said front surface of the substrate;
a transistor provided over said aluminum nitride insulating film, said transistor having at least a channel formation region comprising crystalline silicon, a gate insulating film adjacent to said channel formation region, and a gate electrode adjacent to said channel formation region with said gate insulating film interposed therebetween;
an interlayer insulating film having a leveled upper surface over said transistor; and
a pixel electrode over said interlayer insulating film.

58. (Previously Presented) The device of claim 57 wherein said channel formation region is crystallized by laser irradiation through a layer comprising silicon oxide on said channel formation region.

59. (Previously Presented) The device of claim 57 wherein said substrate is a glass substrate.

60. (Previously Presented) A semiconductor device comprising:
a substrate having a front surface and a rear surface;
an aluminum nitride insulating film containing therein oxygen provided over said front surface of the substrate;
a transistor provided over said insulating film, said transistor having at least a channel formation region, a gate insulating film adjacent to said channel formation region, and a gate electrode adjacent to said channel formation region with said gate insulating film interposed therebetween;
an interlayer insulating film comprising a leveled upper surface over said transistor;
and

a pixel electrode over said interlayer insulating film.

61. (Previously Presented) A semiconductor device comprising:
a substrate comprising a front surface and a rear surface;
an aluminum nitride insulating film containing therein oxygen provided over said front surface of the substrate;
a transistor provided over said insulating film, said transistor having at least a channel formation region, a gate insulating film adjacent to said channel formation region, and a gate electrode adjacent to said channel formation region with said gate insulating film interposed therebetween;
an insulating film over said transistor; and
a pixel electrode over said insulating film.

62. (Previously Presented) The device of claim 60 wherein said substrate is a glass substrate.

63. (Previously Presented) The device of claim 61 wherein said substrate is a glass substrate.

64. (Previously Presented) The device of claim 60 wherein said insulating film has a thermal conductivity of 0.6 W/cm K or higher.

65. (Previously Presented) The device of claim 61 wherein said insulating film has a thermal conductivity of 0.6 W/cm K or higher.

66. (Previously Presented) The device of claim 60 wherein aluminum to nitrogen ratio in said insulating film is in the range of 0.9 to 1.4.

67. (Previously Presented) The device of claim 61 wherein aluminum to nitrogen ratio in said insulating film is in the range of 0.9 to 1.4.